Review Article

THE ATTITUDE OF HEALTH PROFESSIONALS ON ELECTRONIC HEALTH SYSTEM IN DEVELOPING COUNTRIES: A REVIEW ARTICLE.

ABSTRACT

OBJECTIVE: It is anticipated that the implementation of electronic medical record systems would improve healthcare infrastructure as well as clinical treatment by making it easier to store and retrieve the medical histories of patients. This study aims to investigate on the attitude of health professionals on electronic health system in developing countries.

METHODS: The reviewed studies adopted a cross-sectional study design. A systematic review was carried out with the aid of online research journal websites as well as other in-context articles. While conducting this study, the key words in the search query were directed towards the barriers in the attitude of health professionals on electronic health system in developing countries. Areas noted in relation to this study was attitude of health professionals on electronic health system. Therefore, there was linkage of papers pointing out the attitude of health professionals on electronic health system in developing countries.

RESULTS: Of the total respondents, 125 (29.6%) did not utilize the EMR system for their everyday job, whereas 240 (56.7%) had a positive outlook on EMR system use, as reported by Yehualashet et al. in 2015. In 2019, Agyenna et al., The study found that the adoption of e-Health systems among health managers and professionals was significantly influenced by institutional factors.

CONCLUSION: The research found that e-Health adoption among healthcare institutions was negatively impacted by most parameters, but moderately impacted by performance expectancy variables and effort expectancy variables.

KEYWORDS: Electronic Medical Records, Electronic Health, Attitude, Health Professionals, Health

INTRODUCTION

Many hospitals throughout the world have made the switch from paper to electronic medical records. The application of a variety of ITs within the healthcare systems of developing countries has many advantages, including the potential to save lives as a result of improved communication, evidence-based decision making, e-learning for geographically dispersed health professionals, and access to the most recent healthcare information, data handling, and processing (1). Electronic medical records (EMR) systems are quickly becoming the frontrunner among the many different IT system initiatives in developing countries. This is happening because EMRs are designed to improve the data management and communication that occurs within healthcare institutions (2).

It is anticipated that the implementation of electronic medical record systems would improve healthcare infrastructure as well as clinical treatment by making it easier to store and retrieve the medical histories of patients (3). The phrase "electronic health records" (EHRs) refers to digital versions of a patient's medical history that may be shared between a variety of different healthcare providers. In the 1960s, the first electronic health record systems were developed, and the primary purpose of these systems was to create bills (4). A contemporary medical record will include a patient's demographic information, as well as notes on their progress, medications, vital signs, health concerns, past medical history, previous surgical history, vaccinations, age, weight, billing information, laboratory results, and radiological reports (5).

The adoption of an electronic medical record system has the potential to revolutionize healthcare in a variety of ways, including but not limited to the following: cost savings, decreased medical errors, improved service quality, improved patient safety, streamlined decision making, decreased waiting times, protected patient data, and more efficient information sharing (6). These are just some of the potential benefits that could result from the implementation of such a system. Electronic medical record (EMR) systems are being used in an increasing number of medical facilities located in developing nations. There are many different motivations for this trend (7). Environmental competition, a fragmented health information system, incomplete and inconsistent data, delayed and inaccurate reports, a lack of data utilization by health

facilities, a time- and resource-intensive system, and the need for governments to provide health services based on evidence are fundamental reasons for the adoption of EMR systems in developing countries (8). EMR systems are becoming increasingly popular in developed nations as well, particularly in the United States and the United Kingdom.

Even though there has been a lot of interest in and enthusiasm about the implementation of electronic medical records, the global adoption rate is still very low. This is especially true in situations when there are few resources but high rates of both the prevalence and incidence of illness (9). The widespread implementation of electronic medical record systems in developing nations has been shown to be hampered by a number of challenges, according to the findings of many research (10). There are a number of factors that contribute to the low uptake and utilization of EMR systems in developing countries, some of which include healthcare infrastructures, the attitudes and awareness level of health professionals, a lack of proper management, a shortage of resources, skill-related issues, users' resistance, policy-related issues, inadequate commitments from staffs, and inadequate maintenance services (11).

Users are the major consumers of EMR systems in healthcare systems; thus, their dispositions, acceptability, and capacities are essential to the success of the implementation, which is why it is essential that users have positive attitudes. User adoption and organizational buy-in are the two most important aspects that will determine whether or not an electronic medical record system is successful (12).

The Ethiopian Federal Ministry of Health (EFMoH) is creating a suite of information and communications technology (ICT) initiatives, one of which is an electronic medical records system, with the assistance of its thirteen partners (13). Other projects that are currently being worked on include things like Health-net, a health data warehouse, tele-education, telemedicine, a human resources information system, an electronic health information management system, a woreda based planning system, and a health integrated financial information system. An electronic medical record system known as Smart Care has been distributed to hospitals and health centers around the country by the EFMoH with support from Tulane University. The goal of this initiative is to improve the quality of healthcare services by making use of the evidence that is now available (14).

According to Acheampong, the lack of effective leadership, inadequate administration, and the absence of multi-sector collaboration are some of the barriers that stand in the

way of the broad adoption of e-Health (15). Plans for e-health in the country are not sufficiently connected with the nation's health objectives since there is no provision at the national level for the instructions and coordination required for e-Health operations. Cardellino and Finch underline the continuing risk that poor human resource skills provide as an impediment to the widespread deployment of e-Health (16). They point out that the development of trained health professionals who are also fluent in ICT and who have the ability to design, implement, and administer e-Health services has significantly enhanced the efficiency of e-Health in Ghana.

An effective electronic medical record (EMR) system depends on a number of factors, including the users' attitudes and knowledge, as well as their technical abilities, the functionality of the working environment and infrastructure, and the availability of necessary resources (17).

It is not well understood how medical professionals in developing nations feel about electronic medical records (EMR), despite the widespread usage of these records. It will be required to analyze the evidence around the primary causes that led to the outcome of earlier EMR deployments if future EMR rollouts are to be successful. This will be the case whether or not they are successful. However, there is a lack of research on the criteria that indicate whether or not the adoption of electronic medical records (EMR) would be successful in resource-limited situations where unpredictable access to electricity and a lack of computer literacy are important problems. This lack of information makes it difficult to determine whether or not EMR adoption will be successful. Therefore, the aim of this study is to investigate the attitude of health professionals on electronic health system in developing countries.

METHOD

The reviewed studies adopted a cross-sectional study design. A systematic review was carried out with the aid of online research journal websites as well as other in-context articles. While conducting this study, the key words in the search query were directed towards the barriers in the attitude of health professionals on electronic health system in developing countries. Areas noted in relation to this study was attitude of health professionals on electronic health system. Therefore, there was linkage of papers pointing out the attitude of health professionals on electronic health system in developing countries.

In addition, the researcher emphasize that action research is extremely valuable in gaining insights about managerial sense-making, sense-giving and the impact on decision-making in the midst of change interventions. The researchers collected data using Interviews and questionnaire techniques. The research methodology is appropriate and makes absolute sense because there were evident problems on the attitude of health professionals on electronic health system in developing countries.

RESULTS

Of the total respondents, 125 (29.6%) did not utilize the EMR system for their everyday job, whereas 240 (56.7%) had a positive outlook on EMR system use, as reported by Yehualashet et al. in 2015. The results showed that 39% of respondents used the EMR system daily, 75% used it three times a week, 4% used it once a week, and 20% could not recall how often they used it. The majority of respondents (69.2%) use an electronic medical record system to keep track of patient information; nearly half (47.0%) use it to create reports; and just over half (53.3%) use it for data processing and communication. Seventy-two percent of doctors and nurses said they were familiar with EMRs. High security (74.5% of respondents), time savings (69.9% of respondents), better data storage (73.6%), easier data access (75.5% of respondents), and convenience of creating reports (71.0% of respondents) were the most popular reasons for choosing the EMR system over paper based. Rest of Twenty-three percent of those polled did not like EMR systems because of their complexity (17.8%), length of learning curve (18.0%), need for technical expertise (15.7%), and reliance on electricity (11.9%).

Only a third of respondents (35.5%) had access to EMR system refresher training. Significant factors (p-value 0.05) on how health professionals felt about the EMR system included: age, education level, working experience, frequent meetings on EMR, computer literacy, computer access, training on EMR, understanding of EMR, and utilizing EMR. When comparing healthcare workers aged >= 30 and those aged 30, those aged 30 were nearly two-and-a-half times as likely to have a positive outlook on the EMR system (OR=1.89, 95% CI= [1.25-2.86]). First-degree holders in the medical field were more likely to have a positive outlook on the EMR system than those with advanced degrees (OR= 3.24, 95% CI= [1.98-5.31]). Respondents with working experience on EMR, computer literacy, EMR training, daily EMR use, and familiarity with the EMR system were more likely to report a positive attitude

towards the EMR system (OR= 1.80, 95%CI= [1.13-2.86], OR= 2.33, 95%CI= [1.51-3.62], OR= 2.00, 95%CI= [1.28-3.11], and OR= 2.26, 95%CI= [1.44-3.56], respectively).

In other words, we found no statistically significant effects of gender, hospital position, system functionality, presence of EMR manual, presence of assigned body on EMR, budget allocation for EMR, management support, or availability of constant electricity on the opinion of EMR held by healthcare professionals.

Basma et al. (2019) report that among the participants, 51.7% were female and 61.8% were under the age of 30. The majority of participants (52.4%), all nurses, had at least a bachelor's degree, and 82.7% had worked in hospitals for fewer than 10 years. Overall, nurses in Palestine had a favorable attitude toward EHR computerization, with a mean attitude questionnaire score of 59.7 (SD = 12.1). One-way analysis of variance showed no statistically significant differences between age and years of working experience or between age and the overall averages score on the questionnaire. However, there was a statistically significant difference (p.000) between the groups in terms of highest degree achieved, with more positive attitude ratings being associated with more advanced academic credentials.

Overall, the model's power was moderately high, as measured by R^2 (39.6%) and adjusted R^2 (37.8%) and statistical significance by Agyenna et al. In 2019. This was determined by conducting a multiple regression analysis of factors influencing the level and degree of adoption of e-Health devices. The study found that the adoption of e-Health systems among health managers and professionals was significantly influenced by institutional factors such as the health institution's specialization (whether it specializes in paediatrics or not) and whether or not it is a private health practice at the 5% confidence level. Because of the special care required when dealing with young patients, paediatricians are increasingly turning to e-Health systems to help in diagnosis and treatment. Furthermore, as was previously established, private healthcare institutions have a stronger incentive to use e-Health systems in their healthcare operations than their public healthcare counterparts. It bears repeating that in contrast to the overly bureaucratic public health system, the decision-making process is quicker, smoother, and more flexible in a private health setup. The overall power of the model was strong, as measured by the 83.5 count and R^2, reflecting the proportion of correct classification using the model, according to the findings of the

logistic regression study of factors that impact the overall adoption of e-Health devices and systems.

DISCUSSION

In 2015, Yehualashet and coworkers conducted a study to determine how doctors at Ethiopia's Ayder Referral Hospital felt about using electronic medical records (EMRs) and how often they accessed the data they contained. According to these findings, just 240 (56%) of the healthcare workers had a positive outlook, and only about three-quarters (70.8%) actually used the electronic medical record system. There was an improvement in utilization compared to a study done in Addis Abeba and Gondar University Referral Hospital, where the rate was 46.5% (18). The fact that Ayder Referral Hospital is a test bed for the Federal Ministry of Health's and Tulane University's electronic medical record system is probably to blame for the discrepancy. As a result, the service was launched ahead of schedule, and its customers may receive news far sooner than they would at Gondar University Hospital. It's possible that the comparatively high percentage of EMR system adoption in this study is due, in part, to the fact that more of the participants are computer savvy.

However, the utilization of EMR systems in this study (70.8% vs. 90.0% and 88.0%, respectively) is lower than that found in studies conducted in Sweden and the Netherlands. Electric power interruption, restricted access to standby generators, poor maintenance, inadequate management support, insufficient training on the EMR system, less attention to the EMR, and technical problems are some of the most likely causes of this difference. Our usage is higher than that seen in studies conducted in Denmark (62.0%), Finland (56%) and Austria (55.0%) (19).

The acceptability rate among health professionals (56.0%) is very similar to that of the Gondar University Hospital (54.0%) (18). This proportion is lower than that found in a survey conducted in the southeast of Iran, where 67.3% of doctors and nurses favored electronic medical records over paper ones. Reasons for this disparity could include varying levels of investment, computer knowledge, access, managerial support, and individual motivation. In other comparisons, the attitude of the respondents in this study is lower than in the findings of studies conducted in Malawi and Norway, where 71.0% and 81.0% of health professionals thought that the EMR

system changed the quality of healthcare services and satisfied users, respectively (20, 21).

Although many studies have shown that electronic medical records (EMR) systems are vital to enhancing healthcare facilities' productivity, others dispute this, assuming that EMRs are time-consuming, burdensome, and technical in nature (22). The current study's results lent credence to the arguments made in favor of and against these topics.

Multiple studies show that there are significant regional differences in the rate at which electronic medical record systems are adopted. Several barriers that influence doctors' perceptions of and engagement with electronic medical record systems were also discovered in the present investigation. Health professionals' perspectives on and use of the EMR system were significantly influenced by factors like their age, length of employment, level of computer literacy, availability of computers, frequency of EMR-related meetings, and quality of EMR-related training (23).

Respondents younger than 30 years old were more likely to report a positive attitude toward and confidence in utilizing the EMR system compared to older respondents (OR=1.89, 95% CI= [1.25-2.86] and (OR=3.47, 95% CI= [2.18-5.51]). Three-quarters of the study's participants were under the age of 30, and as a result, they were more likely to be willing to adopt and use an EMR system to provide healthcare services than older groups.

Both positive attitudes about and actual usage of the EMR system were more common among respondents with more than six years of professional experience (OR=1.80, 95% CI= [1.13-2.86] and (OR =2.23, 95% CI= [1.31-3.82]). This finding is consistent with the results of studies conducted in hospitals in Kuwait, Saudi Arabia, and Malawi, which found that health professionals' attitudes and use of electronic medical record systems deteriorated with increasing years of experience. Different levels of exposure to and experience with new technologies, computer competence, educational attainment, and individual initiative may account for this conclusion (19).

There was a significant positive association between computer literacy (OR=3.30, 95% CI= [2.04-5.34]), regular meetings (OR=1.81, 95% CI= [1.05-3.12]), and EMR system training (OR=2.33, 95% CI= [1.51-3.62]) and the adoption and usage of EMR systems. Training can improve medical personnel' familiarity with electronic medical record (EMR) systems, as evidenced by a variety of studies and lines of reasoning. This result is supported by research conducted in Iran, Norway, the Netherlands,

Ethiopia at Gondar University, Iran at the University of Texas, Ethiopia at Bahir Dar, Libya, the World Health Organization in Addis Ababa, Ethiopia, and Africa as a whole (24, 25, 26, 27).

The availability of a backup generator and the reliability of the electric supply were other important factors in determining whether or not the electronic medical record system was actually used. This conclusion may be explained by the fact that when management is on board, supervisory efforts and employee motivation both improve. Users will be able to find answers to their questions in the EMR manual, and having a sufficient maintenance budget will allow for more frequent training sessions. This justification is further supported by numerous evidence from various locations (28, 29).

It's 2019 and individuals still have trouble adapting to change, especially when it involves new technologies, say Basma and coworkers. Many people still do not know how to use a computer, despite the fact that we live in a society where computers and high-tech are essential. A nurse's willingness to embrace technology and proficiency with electronic health records (EHRs) are essential to the success of this change. In this situation, switching from paper to electronic records can benefit both patients and staff. The purpose of this research was to examine nurses' perspectives on electronic medical records (EMRs) in a third-world country where EHRs are still in their infancy and nurses' opinions are often overlooked. The results of this study corroborated those of other research showing that nurses see computerization favorably. When asked if nurses should be required to utilize computers, 66.0% of our sample group responded negatively (30, 31).

The average score on the 20-item scale also reflected this upbeat outlook, coming in at 59.7. This upbeat attitude finding was similar to that of nurses in Kuwait (32). However, this mean score was lower than the mean of 73.53 in a 2014 study by Mathew, Lucy, Ann, and Margaret (33).

It will be fascinating to watch if Palestinian nurses' opinions change for the better when they gain more experience with this new technique, given that this research was conducted in a developing country.

technology. In contrast to the findings of Mathew et al. (2014) and Yontz et al. (2015), we discovered that more experienced nurses had a more favorable outlook on the electronic health information system (31, 33). Nurses with more years of experience are likely to have encountered many challenges using a paper-based recording system,

which may have prompted them to employ a computerized system. It would be interesting to compare and contrast places like Palestine, a young developing country, with older developing countries, where nurses tend to be older and traditional health care is more established.

As with Yontz et al. (2015), this study found no association between age and acceptability of computerization (31). Actually, the elder generation took to computer use just as enthusiastically as the younger generation. These findings are at odds with those of a prior study, which found that younger nurses were more open to EHR than their more seasoned counterparts (34). "As a person who is not computer smart, I'm 53 years old, it has been a hardship for me," one 18-month respondent to the Laramee et al. study noted. I feel like my younger colleagues are skating circles around me when it comes to this topic.

Similarly, younger nurses were found in other research to have a more optimistic view of computerization (33, 35). The fact that 81% of our Palestinian sample was comprised of those younger than 36 years old may account for our contrasting findings. The average age of Palestinian citizens is commensurate with the country's youth. We argue that developing nations with young populations, like Palestine, may find it simpler to adapt to technological change than more established nations with an aging population.

Our findings corroborated those of Mathew et al. (2014), who reported that better educated nurses had a more favorable view of EHRs (33). This makes sense given the potential for a higher concentration of online resources in bachelor's degree programs compared to certificate and vocational training. This finding, however, is at odds with the results of a study by Yontz et al. (2015), which found no correlation between educational attainment and sentiments about EMR adoption (31).

We found no correlation between gender and EHR acceptance, in contrast to previous studies (Mathew et al., 2014; Stokowski, 2013). According to these other research, female nurses have a more optimistic view of the EMR than their male counterparts. Many of the nurses in our study agreed with statements like "the EMR improves patient care" and "the EMR is more efficient in providing care for the patient," but they strongly disagreed with statements like "If I had my way, nurses would never have to use computers" (33, 36).

This finding lends credence to the notion that the nurses involved in this study viewed the introduction of EMR systems favorably. Other research have found that the

challenges of using a paper-based documentation system contribute to the widespread acceptance of EMRs (33, 37).

Agyenna et al.'s 2019 findings are consistent with those of Lehman et al. A paper published in 2006 stated that the process of change is less likely to advance if health care workers resist change or lack the traits necessary for change (such as adaptability and growth-orientation) (38). Because of this, studying the factors that encourage or discourage healthcare providers from adopting e-Health is crucial. To a lesser or greater extent, e-Health adoption was influenced by certain professional traits. The Ministry of Health in Ghana (MoH) has recognized the difficulty of human resource deployment in e-Health (39). The ministry stressed that a lack of qualified and trained health care personnel at all levels is one of the main obstacles to e-Health adoption.

The role that demographic characteristics like age, education level, and years of experience have in the uptake of e-Health devices and systems among health professionals and managers was investigated. This research showed that

1. Aspects of one's profession, such as:

a. gender feminine;

b. being in one's youth;

c. possessing a degree; and

d. Health professionals' and managers' adoption of e-Health technology was significantly influenced by the length of time they had spent in their respective roles.

2. Multiple regression analysis conducted on the subject of the use of e-Health devices and systems confirmed, in order of importance:

a. As a self-employed medical professional,

b. With a graduate degree in hand,

c. Due to their youth and

d. When ranked by importance, factors related to the female gender had the greatest impact on adoption.

Therefore, in order to maximize the chance of acceptance, any policy aimed at integrating e-Health should take the specified professional traits into account.

Other factors, such as those listed below, had a greater impact on e-Health adoption than did the location of health institutions.

1. Age range of patients;

2. Single/multi-specialization;

3. Degrees of experience;

4. connectivity to the internet;

5. Size of the clinic;

6. Management's openness to and encouragement of change;

7. Adoption of e-Health is affected by both financial and IT factors.

The findings show that respondents value institutional features relevant to e-Health adoption more highly than their own. It's important to keep this in mind because it doesn't matter how proficient one is with ICT if the institution doesn't promote its use. However, once an ICT system is up and operating, employees have no choice but to use it. Despite its important institutional function,

Anderson said that difficulties in implementing e-Health at that level include a lack of technological expertise, concerns over security, privacy, and confidentiality, and a high initial cost of acquisition.

From the public's, the healthcare system's, and the healthcare organization's perspective, macro-level factors (such as supportive policies) and micro-level barriers (such as physicians' perceptions about technological complexity) contribute to the low adoption rate of e-Health, as synthesized by Vishwanath and Scamurra (41). In essence, they suggested that sustained e-Health deployment requires addressing all three qualities, not just one.

According to Li et al.'s research (2012), additional factors that influence e-Health adoption include performance expectancy, effort expectancy, and other situations that either facilitate or impede adoption (43). It was found that only computer self-efficacy, job fit (made to simplify my work), and cost savings had a minimal effect on the adoption of e-Health, but perceived usefulness and need had a significant effect. It was found that only perceived ease of use influenced e-Health adoption, while all the other variables under efforts expectation had little effect on adoption. It follows that the numerous medical experts take into account the platform's perceived usefulness and simplicity of use as crucial factors in the adoption of e-Health, especially in Ghana and developing economies.

Patient privacy concerns, legal concerns, and time cost had little influence on e-Health adoption, while end user involvement in the design of e-Health devices and tools, interoperability (the ability to make systems and organizations work together), and professional autonomy all had moderate influences. The Ministry of Health, the World Health Organization, and the Rockefeller Foundation have all identified interoperability as both a key factor in E-Health adoption and the end goal of such

widespread implementation (39, 45, 44). DeNardis argues that the lack of interoperability across different e-Health systems is a potential roadblock (46). This refers to the fact that the effectiveness of any e-Health device or system is hampered by the inability of healthcare information systems to interoperate to share information and the large number of available e-Health standards, many of which are competing and overlapping, and some of which even contradict one another.

The results of this research fill a gap in the literature by shedding light on the variables that motivate the spread of e-Health in Ghana and throughout sub-Saharan Africa. The report also suggests that the private sector lead an e-Health revolution in the sub-region, which would be a huge help in lightening the load on governments and their insufficiency.

Table 1. summary of related studies in the review article

Author/s	Title	Country	Method	Results
Gebrehiwot Yehualashet, Mulusew Andualem, Binyam Tilahun	The Attitude towards and Use of Electronic Medical Record System by Health Professionals at a Referral Hospital in Northern Ethiopia: Cross-Sectional Study	Ethiopia	In March 2014, 501 health professionals participated in a cross-sectional quantitative study at an institutional level. The information was gathered through a self-completed survey. Epi-Info version 7 was used for data entry, while SPSS version 20 was used for analysis. To characterize the factors under investigation, descriptive statistics were calculated. The presence of a connection between the study and outcome variables was demonstrated by means of bi-variate and multivariate logistic regression analysis. The level of confidence at which the odds ratio was calculated was 95%.	More than three-quarters (318) were fluent in using computers, and more than half (246) had access to one. Over half (56%) of respondents had a positive outlook on EMR, and a vast majority (71%) already used it. Significant (p 0.05) factors influencing health professionals' perspective and use of EMR system included their age, computer literacy, computer assess, working experience, regular meeting, and training on the EMR system. Users' perspective on electronic medical records (EMR) was also affected by factors such as their degree of education, EMR understanding, and EMR usage.
Basma Salameh, PhD,RN, Linda L. Eddy, PhD,RN, ARNP, Ahmad Batran, PhD,RN, Asma Hijaz, RN,	Nurses' Attitudes Toward the Use of an Electronic Health Information System in a Developing Country.	Palestine	A descriptive, cross-sectional study was conducted with 191 nurses in three governmental hospitals in Palestine.	The results of the nurses' responses to the attitude questionnaire indicate that the vast majority of them are comfortable with and understand the value of the

and Shorook Jaser, RN				electronic documentation system. Nurses should be included from the start of any project. Palestinian electronic health record adoption is a case study for other developing countries.
Agyenna Kesse-Tachi, Alexander Ekow Asmah and Ebenezer Agbozo	Factors influencing adoption of e-Health technologies in Ghana	Ghana	A total of 1640 questionnaires were administered to users and potential users of e-Health technologies in both public and private healthcare centers in Ghana.	The study found that e-Health adoption was significantly influenced by institutional and healthcare manager characteristics. However, the adoption of e-Health devices and systems is only marginally affected by characteristics relating to performance expectancy and effort expectancy.

CONCLUSION

More than half of the respondents had a positive outlook on using the EMR system in their everyday job. Health professionals' perspectives on and engagement with an electronic medical record (EMR) system are influenced by demographic (age, working experience), technological (computer literacy, knowledge), and organizational (computer access, infrastructure, training access, regular meeting, management support) factors. The performance of the EMR system in the research region might benefit from interventions aimed at enhancing skills, awareness, infrastructure, management, and resource allocation.

It would be fascinating to compare the perspectives of nurses in industrialized nations with those of nurses in underdeveloped countries, who are often at the vanguard of EHR implementation and may not always seek nursing opinion. Other variables, including as job categorization, may also impact attitudes toward EHR integration and should be investigated. Only nurses were able to do this task. Other healthcare organizations with comparable or different degrees of acceptability should be identified. Increased staff orientation and ensuring that nurses and other health-care professionals are at the table from planning to final roll-out might be the next steps in ensuring effective integration of EHRs in developing nations.

The research found that e-Health adoption among healthcare institutions was negatively impacted by most parameters, but moderately impacted by performance expectancy variables and effort expectancy variables. Comparing the factors that have been shown to have the greatest impact on e-Health adoption, it is clear that medical practice features and other inhibiting/influencing qualities rank highest. Adoption of e-Health devices and systems is only moderately correlated with the other three characteristics: health care management characteristic, performance expectation, and effort expectancy.

The study found that the factors related to performance expectancy and effort expectancy had only low levels of association with the adoption of e-Health devices and systems, while the factors related to medical practice or health institution characteristics, health care manager characteristics, and other inhibiting/influencing characteristics had a high association with e-Health adoption.

This research has important clinical significance since it suggests how the Ministry of Health in the Republic of Ghana may most effectively implement e-Health system adoption initiatives in the country's health care facilities. Incorporating Health within

the industry is within reach with enough funding and by capitalizing on supportive professional variables. Information may be kept from being stored in isolated areas by implementing programs that combine several pieces of software into a unified whole. Finally, it is suggested that health policymakers include ICT courses that have real-world applications into tertiary health education curricula.

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